

Acute and late toxicity were scored using the EORTC/RTOG radiation morbidity score system. Both patient and physician recorded cosmetic outcome evaluation with a subjective judgment scale at the time of scheduled follow-up. Results: The median follow-up was 24 months (range 19 - 36 months). The acute skin grade toxicity during the treatment was G0 in 10 patients (6.7%), G1 in 105 (70%), G2 in 35 cases (23.3%). No grade 3 or higher acute skin toxicity was observed. At 12 months, skin toxicity was G0 in 105 (70%), G1 in 45 (30%). No toxicity \geq G2 was registered. At 24 months skin toxicity was G0 in 130 (86%), G1 in 20 (14%). No case \geq G2 was registered.

The pre-treatment variables correlated with skin grade G2 acute toxicity were adjuvant chemotherapy ($p=0.01$) and breast volume ≥ 700 cm³ ($p=0.001$). Patients with an acute skin toxicity grade 2 had a higher probability to develop late skin toxicity ($p<0.0001$). In the 98% of cases, patients were judged to have a good or excellent cosmetic outcome. The 2-year-Overall Survival and 2-year-Local Control were 100%.

Conclusions: These data support the feasibility and safety of SIB-IMRT in patients with a diagnosis of breast cancer following BCS with acceptable acute and late treatment-related toxicity. A longer follow-up is needed to define the efficacy on outcomes.

PO-0679

SPECT-CT localization of sentinel lymph nodes for personalized radiotherapy of early breast cancer

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Purpose/Objective: To determine individual variability of axillary sentinel lymph nodes (SLN) localization in patient with breast cancer (BC) and to evaluate clinical value of SPECT-CT with radiocolloids for field design and treatment planning

Materials and Methods: Individual topography of axillary SLN was determined in 127 patients with early BC. All women were candidates for conservative surgical treatment with postoperative radiotherapy. SPECT-CT visualization of SLN started 120-240 min after intratumoral injection of 74-150MBq of 99mTc-radiocolloids. Distribution of axillary SLN was allocated to following subregions: central (C), anterior pectoral (AP), sub-(SP) intrapectoral (IP), lateral (L), subscapular (SSc), LN 'lying on the ribs' (Th).

During the second part of the study we used routine 3D plans for standard tangential fields and contoured on this plans SLN of each axillary subregion. The same procedure was repeated for individually shaped extended tangential fields with upper border on the lower border of the humeral head. At the end, for SLN localized in Th subregion we tested intensity modulated radiation therapy (IMRT) treatment plans Results: SPECT-CT visualization of SLN demonstrated large variability in their localization. In most cases they were detected in C (64 observations, 50.5%) and AP (34 women, 26.8%) subregions. In 19 (14.9%) cases SLN were revealed in Th and in another 10 (7.8%) patients -in L or SSc subregions.

In 17 (13.4%) women SLN were localized both on I and II (IP, SP) levels.

3D modeling of dose distribution obtained with different radiotherapy techniques help us to evaluate coverage of SLN localized in various axillary subregions. We found that our standard tangential fields do not cover SLN in 80% cases. In 20% they encompass C, AP, IP, SP nodes. Slight modification of tangential fields permit effective irradiation of C, AP, IP, SP, L, SSc nodes in all cases. Th LN can be covered only with the help of IMRT

Conclusions: SPECT-CT localization of SLN is an important part of radiotherapy planning in patients with early BC. SPECT-CT results advocate application of standard tangential fields in 20%, extended tangential fields - in 65.1% and IMRT - in remained 14.9% of evaluated patients

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Calcium scores of the coronary arteries are reduced using breath-hold for breast radiotherapy

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Purpose/Objective: Breast cancer radiotherapy has been associated with an increased risk of coronary disease. According to literature the amount of calcium deposits in the coronary arteries (CAC scores) predicts the risk of subsequent cardiovascular events, even without symptomatic Coronary Artery Disease [Greenland 2007; Oudkerk 2008; Kavousi 2012]. However, no data are available on the amount of Coronary Artery Calcium (CAC) in the coronary arteries before and after radiotherapy for breast cancer. Therefore, CAC scores were prospectively determined to identify differences in CAC scores between three groups of breast cancer patients by comparing them before the start of radiotherapy and three years after radiotherapy.

Materials and Methods: Ninety-nine consecutive patients with breast cancer referred for radiotherapy after breast conserving surgery were included in our study. Their cardiovascular risk-profile was registered, and 64multi-slice CT-scans were performed at baseline and three years after radiotherapy.

The patients were subdivided in three groups: left- and right-sided radiotherapy, and left-sided radiotherapy using a breath-hold technique. The differences in increase of the overall and Left Anterior Descending (LAD) CAC scores were determined. Within each patient also LAD-RCA scores were analyzed, representing CAC scores of the LAD coronary artery minus those of the Right Coronary Artery (RCA).

Results: After three years, a non-significant lower increase in overall CAC scores and a significant lower increase in mean CAC scores in the LAD was found for the group with left-sided breast cancer treated with breath-hold compared to the group without breath-hold. Furthermore, the LAD-RCA scores